REMARKS / ARGUMENTS

I. General Remarks and Disposition of the Claims

At the time of the Office Action, claims 18-32 and 34-77 were pending. Claims 18, 19, 25, 26, 28, 29, 31, 32, 34-36, 42, 43, 45, 46, 48, 49, 65, 66 and 68-77 stand rejected and claims 20-24, 27, 30, 37-41, 44, 47, 50-64 and 67 stand withdrawn from consideration. Applicants respectfully request reconsideration of the claims in light of the remarks contained herein.

All the remarks made herein are made in a good faith effort to advance the prosecution on the merits of this case. Applicants reserve their rights to take up prosecution on the claims as originally filed in this or an appropriate continuation, continuation-in-part, or divisional application. Applicants thank the Examiner for her careful consideration of this application, including the references Applicants have submitted.

II. Interview Summary

In accordance with 37 C.F.R. § 1.133 and M.P.E.P. § 713.04, Applicants present the following summary of a telephonic interview between the Examiner, Elena Tsoy, and Applicants' Attorney, Larissa A. Piccardo, Reg. No. 60,448, conducted on June 25, 2008 (the "Interview"). In the Interview, the rejection of claims 18, 19, 25, 26, 28, 29, 31, 32, 34-36, 42, 43, 45, 46, 48, 49, 65, 66 and 68-77 was discussed. Following a brief description of Applicants' claims, Applicants' Attorney described the teachings of *McDaniel*, specifically those reflected in paragraphs [0053] and [0059] and Figures 5 and 6. The Examiner's position on the teachings of U.S. Patent Application Publication No. 2002/0048676 by McDaniel *et al.* (hereinafter "*McDaniel*") and U.S. Patent No. 5,585,524 issued to Sielcken *et al.* (hereinafter "*Sielcken*") was also discussed. With respect to *Sielcken*, Applicants' Attorney stated that the tubular reactors taught by *Sielcken* do not obviate on-the-fly mixing as described in Applicants' claims. No specific agreement was reached as to allowable claim language.

III. Remarks Regarding Rejections Under 35 U.S.C. § 103(a)

A. Claims 35, 36, 42, 45, 46, 48, 49, 68-73, 75 and 76

Claims 35, 36, 42, 45, 46, 48, 49, 68-73, 75 and 76 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0048676 by McDaniel *et al.* (hereinafter "*McDaniel*") in view of U.S. Patent No. 5,585,524 issued to

Sielcken *et al.* (hereinafter "*Sielcken*"). With respect to this rejection, the Office Action mailed on January 18, 2007 (hereinafter "January 18th Office Action") states:

> McDaniel et al disclose a method of treating a subterranean formation comprising providing a servicing fluid comprising low-density composite particulate proppant (See P62). It is the Examiner's position that pumping the servicing fluid into a subterranean formation is implied. McDaniel et al teach that a composite particulate comprises finely divided mineral or finely divided mineral and fiber, bound by suitable organic binder or inorganic binder (See P53). The composite particulates may comprise a low density filler material (such as ground walnut shells) together with a higher density filler material (such as finely divided silica), and a binder of polymer resin and cement, so long as the respective amounts of these ingredients results in a composite particle having the desired low density of 0.90 to 2.20 gm/cm^3 (See P57). . .

(January 18th Office Action at 3-4.) Additionally, the Office Action mailed on October 1, 2007 (hereinafter "October 1st Office Action") states:

> McDaniel et al. are applied here for the same reasons as set forth in paragraph 3 of the Office Action mailed on 1/18/07.
>
> As to amendment, McDaniel et al teach *low density* composite particles made of a resin binder and filler particles selected from at least one member of the group consisting of minerals and low density fillers (See P59), for use as proppants in subterranean formations either to prop open subterranean formation fractures or for gravel packing (See Abstract). The proppants are carried into the well by suspending them in additional fluid to fill the fracture **(claimed fracturing [*sic*] fluid)** with a slurry of proppant in the fluid (See P5).
>
> Resin coated proppants come in two types: precured and curable: precured resin coated proppants comprise a resin coating that is already cured before introducing into the well (See P13), and the curable proppant containing a resin coating of e.g. phenolic, is designed to crosslink under the stress and temperature conditions existing in the well formation (See P 14). The composite particles **may be** made by mixing a stream of the filler particles with a stream of a first portion of binder to form substantially homogeneous core particles of granulated product comprising the filler particles and the first binder stream, and to strengthen the composite particles, a stream of a second portion of binder **may be** coated onto the core particles of granulated product (See P59). The core binders are *preferably* precured (i.e. pre-curing is *optional*); the outer coating resins are **curable** or precured

[*sic*] (See P59). The composite particles are made in a mixer/granulator operated typically as a **batch** process (See P246-250).

McDaniel et al fail to teach that the composite particles are made by on-the-fly mixing; suspending them in additional fluid on-the-fly.

It is within the level of ordinary skill to operate a process continuously. In re Dilnot 138 USPQ 248 (CCPA 1963); In re Korpi 73 USPQ 229 (CCPA 1947); In re Lincoln 53 USPQ 40 (CCPA 1942). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a mixing process of McDaniel et al *continuously* with the expectation of providing the desired composite particles since it is within the level of ordinary skill in the art to operate a process continuously.

Sielcken et al teach that a process that can be carried out in a stirred reactor as batchwise process may be carried out as a *continuous* process using a stirred tank reactor or a tubular reactor (See column 5, lines 61-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a process of McDaniel et al continuously in a tubular reactor (**claimed on-the-fly mixing**) since Sielcken et al teach that a process that can be carried out in a stirred reactor as batchwise process may be carried out as a *continuous* process using a stirred tank reactor or a tubular reactor.

The cited prior art does not expressly teach that the mineral particles are added to a binder stream *before* the low density fillers such that the low density fillers are adhered to a binder coated mineral particles, as required by Amendment.

It is well settled that selection of any order of mixing ingredients or selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results is prima facie obvious In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930); In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a process of the cited prior art by adding mineral particles to a binder stream *before* the low density fillers, with the expectation of providing the desired composite particles, since it is well settled that selection of any order of mixing ingredients or selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results in prima facie obvious, and

> McDaniel et al do not limit their teaching to a particular order of mixing ingredients.
>
> The Examiner takes official notice that pumping the servicing fluid into a subterranean formation is implied.
>
> As to claims 42, 45-46, McDaniel et al teach that the binder may be a polyester resin (See P70), glycidyl ether [*sic*] (See P185) or epoxies such as bisphenol A-epichlorohydrin resin (See P187) or a natural resin (claimed tackifying composition) (See P75).

(October 1st Office Action at 2; emphasis in original). Applicants respectfully disagree and submit that the combination of *McDaniel* and *Sielcken* does not obviate independent claims 35 and 68 because the combination of references does not teach or suggest each and every element of the claims, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by *McDaniel* and *Sielcken*. *Manual of Patent Examining Procedure* (2007) (hereinafter "MPEP") § 2142. Furthermore, *McDaniel* teaches away from Applicants' claimed particulates, and *Sielcken* fails to teach an on-the-fly process, as described in Applicants' Specification and claims. MPEP §§ 2141.02, 2142.

i. *McDaniel* fails to teach or suggest each and every element of independent claims 35 and 68

McDaniel fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate," as recited in independent claims 35 and 68. Rather, the filler material taught in *McDaniel* is combined with a binder to form a low-density composite particulate. *See McDaniel* at [0053], [0057]. Thus, *McDaniel* discloses that a composite particulate is made by mixing the filler particles with a binder to form "substantially homogenous core particles of granulated product comprising the filler particles and the first portion of binder." *See McDaniel* at [0059] and Fig. 5. This composite particulate may then optionally be coated with a second portion of binder. *See McDaniel* at [0059] and Fig. 6. *McDaniel* fails to teach adhering a density-reducing material onto the surface of the resin-coated composite particulate, or that a density-reducing material may be adhered on-the-fly. *Sielcken* fails to teach, suggest, or otherwise render obvious this missing element.

ii. *McDaniel* teaches away from Applicants' "particulate material"

McDaniel defines the particles it teaches as "composite particle[s] comprising filler particles . . . bound by a suitable organic or inorganic binder." *See McDaniel* at [0053]. In

particular, *McDaniel* teaches that "[t]he composite particles are made by mixing filler particles selected from at least one member of the group consisting of finely divided minerals, fibers, ground walnut shells, ground almond shells, and ground coconut shells with at least one binder." *See McDaniel* at [0059]. *McDaniel* further states that, "[i]n particular, the composite particles are made by mixing the filler particles with a first portion of binder to form substantially homogeneous core particles of granulated product comprising the filler particles and the first portion of binder. By 'substantially homogeneous' it is meant that the core particle has ***an absence of a large substrate particle as common, for example, for coated sand proppants***." *Id.* A visual depiction of this is shown in Figure 5 of *McDaniel*.

Applicants' independent claims 35 and 68 specifically recite "providing at least one coated particulate comprising a coating material and a particulate material." In Applicants' Specification, the term "particulate material" is defined as having "[s]uitable sizes rang[ing] from 4 to 100 U.S. mesh, [while] in certain preferred embodiments the sizes range from 10 to 60 US mesh." *See* Specification at [0013]; ***also see*** MPEP § 2111.01 (claims are to be interpreted in light of the specification). Therefore, Applicants respectfully submit that the "particulate material" recited in Applicants' claims is exactly the "substrate particle" which *McDaniel* specifically teaches an "absence of" in the composite particles. Therefore, *McDaniel* cannot obviate Applicants' claims because it teaches away from the "coated particulate" recited in Applicants' claims. MPEP § 2141.02.

iii. No selection of an order of steps in *McDaniel* would obviate Applicants' claimed particulates

The October 1st Office Action states that *McDaniel* fails to teach "that the mineral particles are added to a binder stream *before* the low density fillers such that the low density fillers are adhered to a binder coated mineral particles." (October 1st Office Action at 5; emphasis in original). Despite this missing teaching, the October 1st Office Action states that:

> [I]t would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a process of the cited prior art by adding mineral particles to a binder stream *before* the low density fillers, with the expectation of providing the desired composite particles, since it is well settled that selection of any order of mixing ingredients or selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results in prima facie obvious, and McDaniel et al do not limit their teaching to a particular order of mixing ingredients.

Id.

Furthermore, the Final Office Action states:

> As was discussed in the Office Action, it is well settled that selection of any order of mixing ingredients or ***selection of any order*** of performing process steps is prima facie obvious in the absence of new or unexpected results is prima facie obvious. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried pout a process of the cited prior art by adding mineral particles to a binder stream *before* the low density fillers, with the expectation of providing the desired composite particles, since it is well settled that selection of any order of mixing ingredients or selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results is prima facie obvious, and McDaniel et al do not limit their teaching to a particular order of mixing ingredients.
>
> Since Applicants did not present new or unexpected results of claimed order, Applicants failed to overcome the rejection.

(Final Office Action at 8A(D).)

Applicants respectfully submit, however, that *McDaniel* only teaches ***two*** steps, one of which is optional. *McDaniel* teaches "[t]he composite particles are made by mixing filler particles selected from at least one member of the group consisting of finely divided minerals, fibers, ground walnut shells, ground almond shells, and ground coconut shells with at least one binder." *See McDaniel* at [0059]. *McDaniel* then teaches an optional second step of coating the composite particle with a second coating of binder. *Id.* No selection of the order of these two steps would result in the particulates described in Applicants' claims. As discussed above in Section III(A)(i), the composite particles taught by *McDaniel* have "***an absence of a large substrate particle as common, for example, for coated sand proppants,***" while Applicants' claimed "particulate material" is precisely such a substrate particle, as described in Applicants' Specification. *Id.*, Specification at [0013]. *Sielcken* fails to teach, suggest, or otherwise render obvious this missing element.

iv. *Sielcken* fails to teach an on-the-fly process

The October 1st Office Action states that *Sielcken* teaches "that a process that can be carried out in a stirred reactor as batchwise process may be carried out as a *continuous* process using a stirred tank reactor or a tubular reactor." (October 1st Office Action at 5; emphasis in original). The subject of *Sielcken* is a method for the preparation of an aldehyde.

The cited portion of the reference describes suitable batchwise and continuous processes for the hydroformylation step of the aldehyde preparation method. Such processes do not obviate on-the-fly methods for adhering density-reducing materials onto a surface of a coated particulate for use in a subterranean formation, as there are substantial differences in structure and function of Applicants' invention and the invention of *Sielcken*. MPEP § 2141.01(a). Furthermore, the "tubular reactor" taught by *Sielcken* is not analogous to the on-the-fly method of Applicants' claims.

In response to this argument, the Examiner has stated that "Sielcken teaches that if components can be mixed in a batchwise process, they may be mixed in a stirred tank reactor or a tubular reactor. Since mixing is a **mechanical** process, not chemical, it is irrelevant what particular components are to be mixed." (Final Office Action at 8A(C)., emphasis in original) This response fails to address Applicants' arguments that (1) there are substantial differences in structure and function of Applicants' invention and the invention of *Sielcken* and (2) the "tubular reactor" taught by *Sielcken* is not analogous to the on-the-fly method of Applicants' claims.

v. Conclusion

Therefore, independent claims 35 and 68 are not obviated by *McDaniel* in view of *Sielcken*. Claims 36, 42, 45, 46, 48, 49, 69-73, 75 and 76 depend, either directly or indirectly, from independent claim 35 or 68 and therefore include all of the elements of the independent claim from which they each depend. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

B. Claims 18, 19, 25, 28, 29, 31-32, 34, 65, and 66

Claims 18, 19, 25, 28, 29, 31-32, 34, 65, and 66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, further in view of U.S. Patent No. 4,969,523 issued to Martin *et al.* (hereinafter "*Martin*"). With respect to this rejection, the October 1st Office Action states:

> McDaniel et al in view of Sielcken et al are applied here for the same reasons as above. McDaniel et al teach that the filler particles should be inert to components in the subterranean formation, e.g., well treatment fluids, and be able to withstand the conditions, e.g., temperature and pressure, in the well (See P81). However, McDaniel et al fail to teach that polystyrene divinylbenzene may be used as the density reducing material.
>
> Martin et al teach that a combination of first and second particles having a density within the range of about 0.7 to about 4.0

> (See column 3, lines 12-26), wherein the first particles has a density selected from the lower portion of the density range such as polystyrene divinylbenzene (SVDB) (See column 3, line 28) and the second particles has a density selected from the upper portion of the density range such as sand (See column 3, line 33) may be used in a servicing fluid for gravel packing of a subterranean formation (See column 2, lines 12-15). In other words, Martin et al teach that low density SVDB is suitable for the use in a servicing fluid, i.e. it is inert to components in the subterranean formation, e.g., well treatment fluids, and is able to withstand the conditions, e.g., temperature and pressure, in the well.
>
> Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used low density SVDB as the density reducing material in McDaniel et al since Martin et al teach that low density SVDB is suitable for the use in a servicing fluid, and McDaniel et al do not limit the density reducing material.

(October 1st Office Action at 3; emphasis in original). Applicants respectfully disagree and submit that the combination of *McDaniel*, *Sielcken*, and *Martin* does not obviate independent claim 18 because the combination of references does not teach or suggest each and every element of the claim, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by *McDaniel*, *Sielcken*, and *Martin*. MPEP § 2142.

As discussed above in Section III(A) above in reference to independent claims 35 and 68, *McDaniel* (1) fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate," as recited in independent claim 18, (2) teaches away from Applicants' claimed "particulate material," and (3) fails to render Applicants' claims obvious regardless of the order in which its two taught steps are performed. Further, as also discussed in Section III(A) above, *Sielcken* fails to teach the missing elements, nor does the combination of *McDaniel* and *Sielcken* render obvious the missing elements. *Martin* also fails to teach or render obvious the missing elements, as it does not teach or render obvious adhering polystyrene divinylbenzene (or any density reducing material) to the surface of a coated particulate, much less doing so on-the-fly. Rather, the Examiner has merely relied on *Martin* for its alleged teaching of the use of polystyrene divinylbenzene as a density reducing material.

In response to these arguments, the Final Office Action states that "[a]s to over McDaniel in view of Sielcken, the Examiner disagrees with this argument for the reasons

discussed above. As to Martin, it is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination." (Final Office Action at 8B.)

Applicants submit that, for at least the reasons discussed above in Section III(A), the Examiner's arguments with respect to *McDaniel* and *Sielcken* fail to render obvious Applicants' claims. Furthermore, the Examiner has provided no showing that an "intended use" for polystyrene divinylbenzene is adhering it to the surface of a coated particulate, much less doing so on-the-fly. Rather, the Examiner has merely shown that polystyrene divinylbenzene is suitable for use in subterranean formations.

Therefore, independent claim 18 is not obviated by *McDaniel* in view of *Sielcken* further in view of *Martin*. Claims 19, 25, 28, 29, 31-32, 34, 65, and 66 depend, either directly or indirectly, from independent claim 18 and therefore include all of the elements of the independent claim. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

C. Claims 35, 36, 45, 49, 68-70, 72, and 75

Claims 35, 36, 45, 49, 68-70, 72, and 75 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,493,875 issued to Beck *et al.* (hereinafter "*Beck*") in view of *Sielcken*. With respect to this rejection, the October 1st Office Action states:

> Beck et al disclose a method of treating a subterranean formation comprising the steps of: providing a servicing fluid comprising reduced-density coated particulate proppant (See column 1, lines 11-15, 57-68). Such a coating may be applied to a great number of dense, high-strength core particulates by the steps of: (1) **mixing** the core particles with adhesive to provide adhesive-coated core particles, (2) while the adhesive is still tacky, mixing the coated core particles with hollow microparticles (preferably hollow ceramic microparticles) to adhere a plurality of the microparticles to each coated core, and (3) curing each adhesive composition to a nontacky state while keeping the individual coated core particles substantially out of adherent contact with each other (See column 2, line 61 to column 3, line 8[;] column 6, lines 34-45). The Examiner takes official notice that pumping the servicing fluid into a subterranean formation in implied.
>
> Beck et al fail to teach that the composite particles are made by on-the-fly mixing.
>
> Sielcken et al are applied here for the same reasons as above.

(October 1st Office Action at 4; emphasis in original). Furthermore, the Examiner clarified in the Final Office Action that the conclusion of this argument was:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out a process of Beck et al continuously in a tubular reactor (claimed on-the-fly mixing) since Sielcken et al teach that a process that can be carried out in a stirred reactor as batchwise process may be carried out as a *continuous* process using a stirred tank reactor or a tubular reactor.

(Final Office Action at 8A(C).) Applicants respectfully disagree and submit that *Beck* teaches away from Applicants' claims. MPEP § 2141.02.

In particular, *Beck* does not teach "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate," as recited in independent claims 35 and 68. Rather, as the October 1st Office Action states, *Beck* teaches coating a proppant by the steps of: (1) mixing the core particles with adhesive to provide adhesive-coated core particles, (2) while the adhesive is still tacky, mixing the coated core particles with hollow microparticles to adhere a plurality of the microparticles to each coated core, and (3) curing each adhesive composition to a nontacky state ***while keeping the individual coated core particles substantially out of adherent contact with each other***. *See* col. 2, line 61 - col. 3, line 8 (emphasis added). To keep the individual coated core particles substantially out of adherent contact with each other, *Beck* teaches that the core particles may be tumbled in an excess of hollow microparticles. *See* col. 3, lines 10-14. Such a requirement teaches away from an on-the-fly process. MPEP § 2141.02.

In response to this argument, the Final Office Actions states "[t]he 'while keeping the individual coated core particles substantially out of adherent contact with each other' requirement would not teach away from an on-the-fly process because the on-the-fly process can also be carried out in excess of hollow microparticles." (Final Office Action at 8C.) Applicants respectfully disagree. The process of *Beck* does indeed teach away from Applicants' claimed on-the-fly process. *Beck* teaches tumbling the core particles in an excess of hollow microparticles to keep the individual coated core particles substantially out of adherent contact with each other; such a tumbling process teaches away from Applicants' claimed on-the-fly method. As defined in Applicants' Specification, on-the-fly means that "a flowing stream is continuously introduced into another flowing stream so that the streams are combined and mixed while continuing to flow as a single stream as part of the on-going treatment." *See Specification* at [0036]. Thus, if the

core particles were tumbled in an excess of hollow microparticles, there would be no second flowing stream, and thus the process would not be an on-the-fly process.

Furthermore, as argued above in Section III(A), *Sielcken* fails to obviate Applicants' claimed on-the-fly method because (1) there are substantial differences in structure and function of Applicants' invention and the invention of *Sielcken* and (2) the "tubular reactor" taught by *Sielcken* is not analogous to the on-the-fly method of Applicants' claims.

Therefore, independent claims 35 and 68 are not obviated by *Beck* in view of *Sielcken*. Claims 36, 45, 49, 69, 70, 72, and 75 depend, either directly or indirectly, from independent claim 35 or 68 and therefore include all of the elements of the independent claim from which they each depend. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

D. Claims 18, 19, 25, 28, 29, 31, 32, 65, 66, and 77

Claims 18, 19, 25, 28, 29, 31, 32, 65, 66, and 77 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, further in view of *Martin*, further in view of U.S. Patent No. 5,908,073 issued to Nguyen *et al.* (hereinafter "*Nguyen*"). With respect to this rejection, the October 1st Office Action states:

> The cited prior art is applied here for the same reasons as above. McDaniel et al do not expressly teach that a fracturing fluid is pumped into a subterranean formation. However, Nguyen et al teach pumping of a fracturing fluid into a subterranean zone (See Abstract).
>
> As to claim 34, McDaniel et al fails to teach that the reduced-density, coated particulates are suspended in the servicing fluid on-the-fly.
>
> Nguyen et al teach that a suspension of fibrous bundles and proppant in a fracturing fluid can be accomplished by utilizing conventional batch mixing techniques to mix and suspend the bundles and proppant, or one or both of the bundles and proppant can be injected into the fracturing fluid on-the-fly (See column 5, lines 47-57).
>
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to have suspended the reduced-density, coated particulates in a servicing fluid in McDaniel et al on-the-fly since Nguyen et al teach that a suspension of fibrous bundles and proppant in a fracturing fluid can be accomplished by utilizing conventional batch mixing techniques to mix and suspend the bundles and proppant, or one or

> both of the bundles and proppant can be injected into the fracturing fluid on-the-fly.

(October 1st Office Action at 5.; emphasis in original) Applicants respectfully disagree and submit that the combination of *McDaniel*, *Sielcken*, *Martin*, and *Nguyen* does not obviate independent claim 18 because the combination of references does not teach or suggest each and every element of the claim, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by *McDaniel*, *Sielcken*, and *Martin*. MPEP § 2142.

In Applicants previous response filed February 1st, 2008, Applicants noted that this rejection differs from the rejection over *McDaniel*, *Sielcken*, and *Martin* in two respects: the addition of *Nguyen* as a reference and the rejection of claim 77. Claim 77 depends from independent claim 35, whereas all of the other dependent claims in this rejection depend, either directly or indirectly, from independent claim 18. As the Examiner has provided no rationale as to why the elements of independent claim 35, much less the additional element of claim 77, is obviated by the addition of *Nguyen* to the combination of references, Applicants respectfully requested withdrawal of this rejection with respect to claim 77 for at least this reason. The Examiner did not respond to this argument. Applicants again request withdrawal of this rejection with respect to claim 77 for at least this reason.

As discussed above in Sections III(A) and III(B) above, *McDaniel* (1) fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate," as recited in independent claim 18, (2) teaches away from Applicants' claimed "particulate material," and (3) fails to render Applicants' claims obvious regardless of the order in which its two taught steps are performed. Further, as also discussed in Section III(A) above, *Sielcken* fails to teach the missing elements, nor does the combination of *McDaniel* and *Sielcken* render obvious the missing elements. *Martin* also fails to teach or render obvious the missing elements, as it does not teach or render obvious adhering polystyrene divinylbenzene (or any density reducing material) to the surface of a coated particulate, much less doing so on-the-fly. Rather, the Examiner has merely relied on *Martin* for its alleged teaching of the use of polystyrene divinylbenzene as a density reducing material. Nor does *Nguyen* teach or render obvious the missing elements, as it does not teach or render obvious adhering polystyrene divinylbenzene (or any density reducing material) to the surface of a coated particulate, much less doing so on-the-fly. Rather, the Examiner has merely

relied on *Nguyen* for its alleged teaching of suspension of fibrous bundles and/or proppant in a fracturing fluid on-the-fly.

Therefore, independent claim 18 is not obviated by *McDaniel* in view of *Sielcken* further in view of *Martin* further in view of *Nguyen*. Claims 19, 25, 28, 29, 31-32, 34, 65, and 66 depend, either directly or indirectly, from independent claim 18 and therefore include all of the elements of the independent claim. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

E. Claims 42, 46, 73, and 76

Claims 42, 46, 73, and 76 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Beck* in view of *Sielcken*, further in view of *McDaniel* "for the same reasons of record as set forth in paragraph 5 of [the January 18th Office Action]." (October 1st Office Action at 6.) With respect to this rejection, the January 18th Office Action states:

> Beck et al further teach that a ...resin composition could comprise a liquid resole phenol/formaldehyde resin (See column 4, lines 1-3). Beck et al fail to teach that the binder could be glycidyl ether or epoxies such as bisphenol A-epichlorohydrin resin ... or a polyester or a natural resin."
>
> ...
>
> McDaniel et al teach that a liquid resole phenol/formaldehyde resin (See P53, 70, 98) or a glycidyl ether or epoxies such as bisphenol A-epichlorohydrin resin (See P187) or a polyester resin (See P70) or a natural resin (See P75) can be used for binding particles together.

(January 18th Office Action at 5-6). Applicants respectfully disagree and submit that the combination of *Beck*, *Sielcken*, and *McDaniel* does not obviate independent claims 35 and 68 because the combination of references does not teach or suggest each and every element of the claims, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by *Beck*, *Sielcken* and *McDaniel*. MPEP § 2142.

In particular, as discussed above in Section III(C), *Beck* teaches away from Applicants' claimed on-the-fly process. As also discussed in Section III(C), *Sielcken* fails to teach or render obvious the missing elements. Similarly, as discussed in Section III(A), *McDaniel* fails to teach or render obvious these missing elements.

Therefore, independent claims 35 and 68 are not obviated by *Beck* in view of *Sielcken* further in view of *McDaniel*. Claims 42, 46, 73, and 76 depend, either directly or

indirectly, from independent claims 35 or 68 and therefore include all of the elements of the independent claim from which they each depend. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

F. Claims 26, 43, and 74

Claims 26, 43, and 74 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *McDaniel* in view of *Sielcken* in view of *Martin/McDaniel* in view of *Sielcken* in view of *Martin* in view of *Nguyen/McDaniel* in view of *Sielcken/Beck* in view of *Sielcken/Beck* in view of *Sielcken* in view of *McDaniel* further in view of U.S. Patent 4,665,988 issued to Murphey *et al.* (hereinafter "*Murphey*") "for the reasons of record set forth in paragraph 8 of [the January 18th Office Action]." (October 1st Office Action at 7.) With respect to this rejection, the January 18th Office Action states:

> The cited prior art fails to teach claimed solvent.
>
> ...
>
> Murphey et al teach ... the use of ethylene glycol butyl ether (See column 5, line 54) as a solvent for dissolving epoxy resins (See column 5, lines 47-48) such as bisphenol A-epichlorohydrin (See column 5, line 60).

(January 18th Office Action at 8.) Applicants respectfully disagree and submit that any of these combinations of references does not obviate independent claims 18, 35 and 68 because the combination of references does not teach or suggest each and every element of the claims, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by any of the combinations. MPEP § 2142.

Each of the following combinations of references have been discussed above:

- *McDaniel* in view of *Sielcken* in view of *Martin* was discussed in Section III(B);
- *McDaniel* in view of *Sielcken* in view of *Martin* in view of *Nguyen* was discussed in Section III(D);
- *McDaniel* in view of *Sielcken* was discussed in Section III(A);
- *Beck* in view of *Sielcken* was discussed in Section III(C); and
- *Beck* in view of *Sielcken* in view of *McDaniel* was discussed in Section III(E).

Murphey does not teach or render obvious the elements not taught by each of the combinations of references. Rather, the Examiner has merely relied upon *Murphey* for its alleged teaching of the use of ethylene glycol butyl ether as a solvent for dissolving epoxy resins such as bisphenol A-epichlorohydrin.

Therefore, independent claims 18, 35, and 68 are not obviated by any of the combinations of references listed. Claims 26, 43, and 74 depend, either directly or indirectly, from independent claims 18, 35 or 68 and therefore include all of the elements of the independent claim from which they each depend. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of this rejection.

IV. No Waiver

All of Applicants' arguments are without prejudice or disclaimer. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art. The example distinctions discussed by Applicants are sufficient to overcome the outstanding rejections.

SUMMARY

In light of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Because this response has been timely filed, Applicants respectfully request that the Examiner issue an advisory action if the claims are not found to be allowable in light of the remarks contained herein. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe there are no fees due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any additional fees for extensions of time, the Commissioner is authorized to debit Baker Botts L.L.P. Deposit Account No. 02-0383, Order Number 063718.0178, for any underpayment of fees that may be due in association with this filing.

Respectfully submitted,

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